HUMAN FACTORS ANALYSIS AND CLASSIFICATION IN INCIDENT INVESTIGATIONS






DISCOVER. LEAD. TRANSFORM.

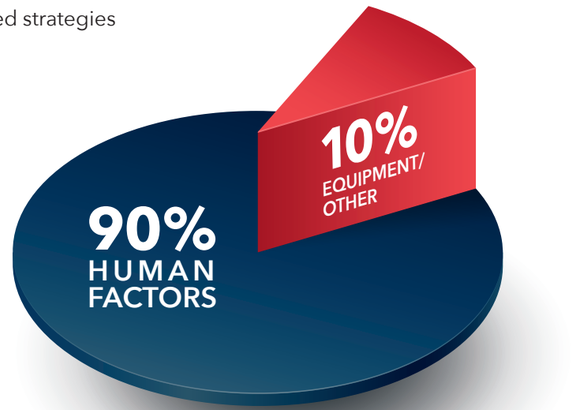
BACKGROUND

Worldclass Human Reliability

In recent years, safety leaders in high-risk industries have recognized a disproportionate trend of human contribution and causes in incident and accident investigations. In fact, it has been documented that human error is responsible for 70%-90% of identified failures, directly attributable to a breakdown in human reliability and performance. A learning organization must study this with a focus on the system of operations and how human error is produced and transmitted within it. From this we can design resiliency and barriers to recognize and respond to human error before it creates an unsafe situation. The investigation of mistakes and violations by individuals are just the beginning of an effective analysis; they are the window we must look through to find the antecedents and hidden influences that create a pathway for error to become an incident.

Other high performing global industries including military and commercial aviation, space exploration, transportation, nuclear power, oil & natural gas have studied the effect of human factors on incidents and accidents for decades and developed strategies for analysis and intervention leading to exceptional safety performance. We should learn from their lessons and best practices.

An effective investigation is the most proactive tool available for identifying the precursors leading to incidents. Human Factors Analysis and Classification has two foundational components: competent, well-trained investigators and a classification system designed to capture human causes and provide for organizational cross-feed of information in order to develop preemptive intervention strategies.



"We believe that the majority of our Process Safety incidents are initiated by human error."

Director, Global Process Safety

70-90% of all incidents and accidents involve human factors. By exposing and analyzing human factors in incident investigations, organizations can make corrective action to prevent reoccurrence and improve operational efficiency and safety.

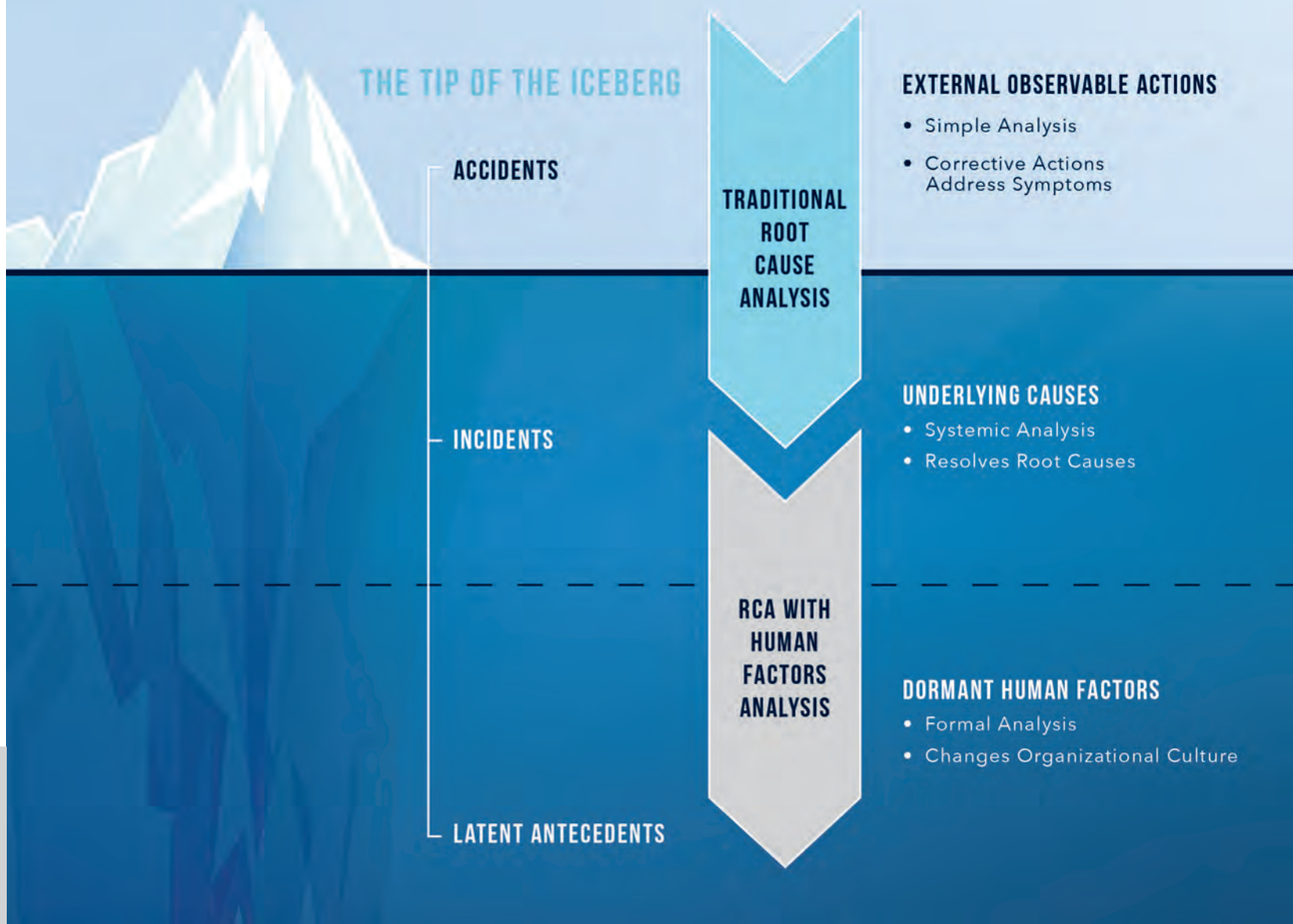
The Evolution of Human Factors Analysis

Human factors analysis and classification has its roots in Military and Commercial aviation communities seeking to understand the human influences on failures. Because of the exceptional success in improving safety and operational performance in these sectors, this approach to human factors analysis has become a model for all industries seeking to achieve highly reliable and resilient operations.

The purpose of a Human Factors Analysis and Classification System (HFACS) is to provide for the cross-feed of human error data using a common categorization system that involves human factors and an accepted and standardized taxonomy.

An effective HFACS program serves as the baseline for:

- ✓ A systematic methodology for analyzing human error and its influences on operations as a result of incidents and accidents
- ✓ A taxonomy for classification
- ✓ A system for acquiring, aggregating and analyzing data

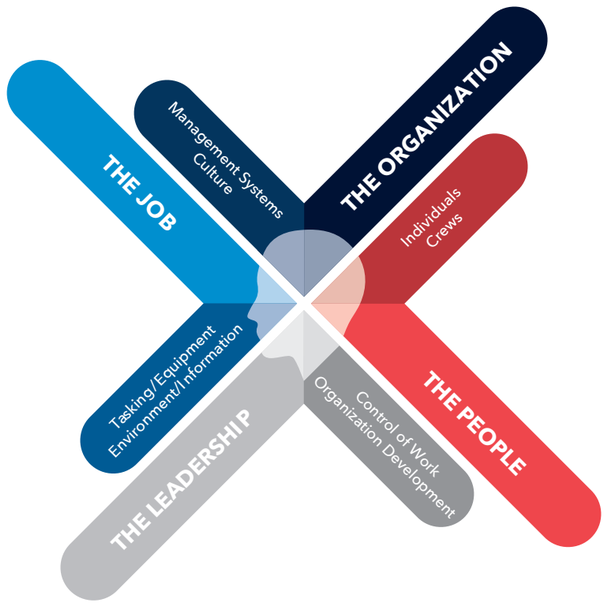


A GLOBAL SOLUTION

A simple solution to a complex problem

Enhanced incident investigation and root cause analysis programs with Human Factors Analysis and Classification capability will expand your ability to expose obscure human influence in your operations, apply effective intervention strategies, and affirm your commitment to creating a safety-oriented culture.

THE OPERATIONAL JUNCTURE™



Operational Juncture – The concurrence of people performing a job and guided by leadership within an operational setting where choices are made leading to outcomes that are either desirable or undesirable.

ROOT CAUSE ANALYSIS METHODOLOGY

"We see Human Factors Analysis as 'the next thing' in advancing our safety performance."

Vice President
Environmental, Health and Safety

The advantages to this approach are:

- It seamlessly blends with any root cause analysis method
- It is proven in high reliability organizations including oil & natural gas exploration, nuclear power, chemical manufacturing, and military and commercial aviation
- It is data driven and integrates into your software for collection, analysis and reporting

SITE SPECIFIC DEPLOYMENT TEMPLATE

A standardized approach for global implementation

In order to ensure the quality and consistency of delivery, Vetergy uses a standardized, customizable deployment template at each site. The template incorporates three general components; site introduction and planning, initial capability delivery and sustainment and mentoring.

Site Introduction and Planning

In order to prepare for on-site activities, coordination is conducted with the site Safety and Operational leadership in order to schedule the training and workshops, coordinate training facilities and support requirements.

Initial Capability Delivery

Certified instructors conduct on-location training for leadership, supervisors and investigators. At the conclusion of this initial skills training site leadership will have a better understanding of the influence of human factors within operations and investigators will have the capability to conduct effective human factors analysis in future incidents investigations.

Sustainment & Mentoring

Throughout the program life-cycle, continuous improvement and change management methods will be used. Vetergy will provide initial and continuous training for investigators and supervisors, mentoring and investigation support including independent third party investigation services when the situation warrants.

INITIAL CAPABILITY DELIVERY

Getting started at your site

Initial competence is achieved using an "introduce, demonstrate, do" instructional strategy across three events; instructor led classroom training, a facilitated investigation workshop and an observed investigation proficiency check.

An introduction to Human Factors Analysis is provided to site leadership to include the operational benefits of an effective program. Additionally, this training will orient the leadership team on the schedule and intended outcome of the program along with and any program specific training requirements.

Incident Investigation Training incorporating Human Factors Analysis for investigators, operators and supervisors is provided in an instructor-led format. The conclusion of this training is a practical exercise to demonstrate the benefits and functionality of Human Factors Analysis and Classification by applying HFACS in conjunction with your RCA methodology.

This workshop is aimed at providing a demonstration for the student investigators on how to evaluate Human Factors as a part of the Root Cause Analysis methodology. This workshop is conducted by a certified instructor using a real-world incident.

This workshop is designed to be conducted on a live investigation of a current incident, but can be completed using a previously investigated incident the student investigator is unfamiliar with. During this event, the instructor observes a student led causal analysis to assess the competency of the investigator in incorporating Human Factors Analysis in their Root Cause Analysis investigation.

HUMAN FACTORS ANALYSIS IN INVESTIGATIONS TRAINING

Human Factors Analysis training is designed to give investigators the competencies to effectively expose active and latent failures within our operational systems in order to develop effective intervention strategies to prevent recurrence.

1

UNIT ONE: Human Factors Theory

Module 0	Introduction
Module 1	Human Factors Theory

2

UNIT TWO: Investigating Human Factors

Module 2	Fundamentals of Incident Investigations
Module 3	Gathering HFACS Data
Module 4	Juncture Analysis

3

UNIT THREE: Human Factors Taxonomy and Analysis

Module 5	The Human Factors Taxonomy
Module 6	Interviewing for Human Factors
Module 7	Post-Investigation Activities

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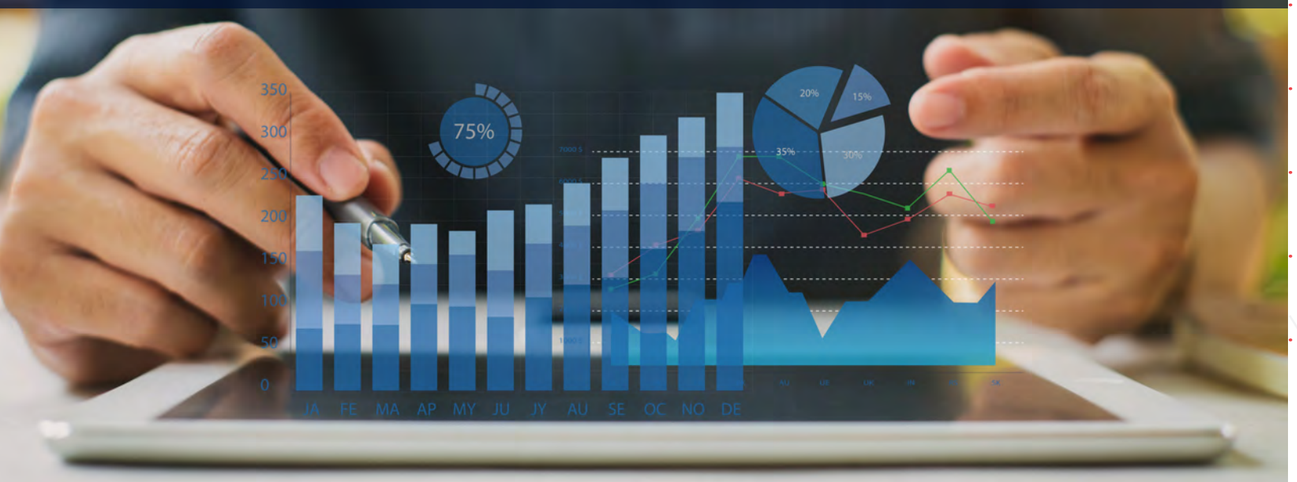
UNIT FOUR: Practical Application

Module 8	Case Study
Module 9	Course Feedback

Trained investigators and effective analyses are the most proactive tool we have in understanding hazards and installing adequate controls to create safe and resilient operational systems.



KEY PRINCIPLES TO UNDERSTANDING HUMAN FACTORS WITHIN YOUR OPERATIONS

- Human error is a product of today's complex operational systems
- Human error cannot be eliminated
- Complex systems are not inherently safe
- Deep-rooted factors have broad impacts on the system
- Bias inhibits effective analysis of the system

ABOUT VETERGY GROUP

DISCOVER. LEAD. TRANSFORM.

Vetergy Group is a global company led by a group of decorated military veterans. We maximize the ability of the world's great organizations to operate at peak performance. We do this by building cultures of high operational resilience using program development and implementation, assessments and workshops, and professional coaching. As U.S. Marine Corps and Naval commanders, pilots, Top Gun instructors, test pilots, accident investigators, safety officers and HFACS trainers, our consultants bring more than 100 years of combined experience in accident investigation and human factors analysis. Our unique value proposition enables us to fully support the human performance requirements of our partners.

Our experience includes military human performance evaluation models and multi-million dollar incident investigations in private industry. Our goal is to become your strategic partner and advance your human reliability efforts in an efficient and professional manner.

Collectively, Vetergy Group trainers and investigators have completed hundreds of successful human error investigations. Our experienced team and disciplined approach bring a unique resource to improving human reliability.

Vetergy Group's leadership team is committed to fostering an environment of high integrity and passion for collaborative customer focus and delivery of measurable results.

"Because our trainers are experienced military leaders and motivators, our instructional techniques are more effective than a purely academic approach. Team members get energized through our trainers."

David Wilbur
President, Vetergy Group

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